

Polymer Chemistry

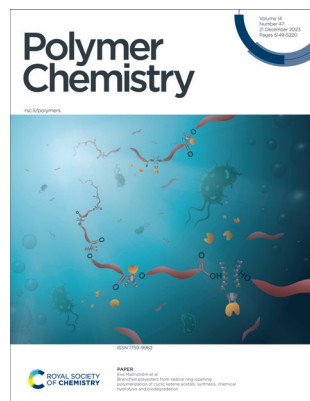
The home for the most innovative and exciting polymer chemistry, with an emphasis on polymer synthesis and applications thereof

rsc.li/polymers

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1759-9962 CODEN PCOHC2 14(47) 5149-5220 (2023)



Cover

See Eva Malmström et al., pp. 5154–5165.

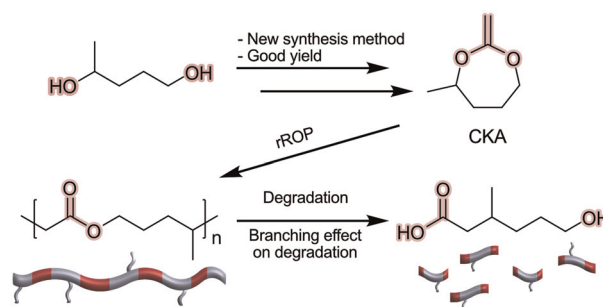
Image reproduced by permission of Tobias Bensselfelt from *Polym. Chem.*, 2023, **14**, 5154.

PAPERS

5154

Branched polyesters from radical ring-opening polymerization of cyclic ketene acetals: synthesis, chemical hydrolysis and biodegradation

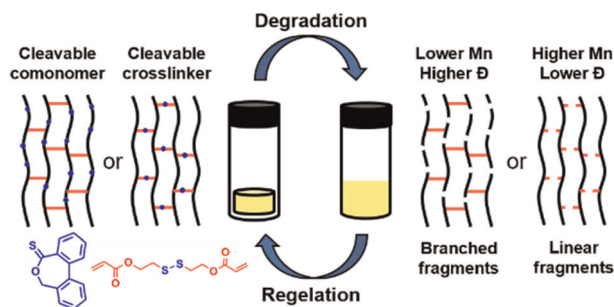
Maryam Mousa, Magnus Jonsson, Olivia Wilson, Roy Geerts, Helena Bergenudd, Christoffer Bengtsson, Anna Larsson Kron and Eva Malmström*



5166

Strands vs. crosslinks: topology-dependent degradation and regolation of polyacrylate networks synthesised by RAFT polymerisation

Frances Dawson, Touseef Kazmi, Peter J. Roth and Maciej Kopeć*



Editorial Staff

Executive Editor

Maria Southall

Deputy Editor

Laura Ghandhi

Editorial Production Manager

Cara Sutton

Assistant Editors

Sean Browner, Molly Colgate, Paul Scott, Alison Winder

Editorial Assistant

Basita Javeed

Publishing Assistant

Allison Holloway

Publisher

Sam Keltie

For queries about submitted papers, please contact

Cara Sutton, Editorial Production Manager in the first instance.

E-mail: polymers@rsc.org

For pre-submission queries please contact Maria Southall,

Executive Editor. E-mail: polymers-rsc@rsc.org

Polymer Chemistry (electronic: ISSN 1759-9962)

is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK

Tel +44 (0)1223 432398; E-mail: orders@rsc.org

2023 Annual (electronic) subscription price: £2935; \$5014.

Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK, Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017;

E-mail: advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

Polymer Chemistry

rsc.li/polymers

The home for the most innovative and exciting polymer chemistry, with an emphasis on polymer synthesis and applications thereof.

Editorial Board

Editor-in-Chief

Christopher Barner-Kowollik, Queensland University of Technology, Australia

Associate Editors

Athina Anastasaki, ETH Zurich, Switzerland

Filip Du Prez, Ghent University, Belgium

Holger Frey, Johannes Gutenberg University Mainz, Germany

Rongrong Hu, South China University of Technology, China

Jeremiah A Johnson, Massachusetts Institute of Technology, USA

Tanja Junkers, Monash University, Australia

Rebekka Klausen, Johns Hopkins University, USA

Dominik Konkolewicz, Miami University, USA

Zhibo Li, Qingdao University of Science and Technology, China

Zi-Chen Li, Peking University, China

Emily Pentzer, Texas A&M University, USA

Sébastien Perrier, University of Warwick, UK

Advisory Board

Steven Armes, University of Sheffield, UK

Remzi Becer, University of Warwick, UK

Matthew Becker, Duke University, USA

Erik Berda, University of New Hampshire, USA

Kerstin Blank, Max Planck Institute of Colloids and Interfaces, Germany

Eva Blasco, Heidelberg University, Germany

James Blinco, Queensland University of Technology, Australia

Chris Bowman, University of Colorado, USA

Cyrille Boyer, University of New South Wales, Australia

Neil Cameron, Monash University, Australia

Luis Campos, Columbia University, USA

Changle Chen, University of Science and Technology of China, China

Mao Chen, Fudan University, China

Xuesi Chen, Chinese Academy of Sciences, China

Yoshiki Chujo, Kyoto University, Japan

Franck D'Agosto, CPE Lyon, France

Priyadarsi De, Indian Institute of Science Education and Research Kolkata, India

Guillaume Delaitre, University of Wuppertal, Germany

Dagmar D'hooge, University of Ghent, Belgium

Elizabeth Elacqua, Pennsylvania State University, USA

Brett P Fors, Cornell University, USA

Theoni Georgiou, Imperial College London, UK

Didier Gigmes, Aix-Marseille Université, CNRS, France

Atsushi Goto, Nanyang Technological University, Singapore

Sophie Guillaume, Institut des Sciences Chimiques de Rennes, France

Dave Haddleton, University of Warwick, UK

Nikos Hadjichristidis, King Abdullah University of Science and Technology, Saudi Arabia

Yanchun Han, Chinese Academy of Sciences, China

Eva Marie Harth, University of Houston, USA

Simon Harrison, CNRS - University of Toulouse, France

Laura Hartmann, Heinrich Heine University Düsseldorf, Germany

Fiona Hatton, Loughborough University, UK

Andrew B. Holmes, University of Melbourne, Australia

Richard Hoogenboom, University of Ghent, Belgium

Steve Howdle, University of Nottingham, UK

Feihe Huang, Zhejiang University, China

Toyoji Kakuchi, Changchun University of Science and Technology, China

Julia Kalow, Northwestern University, USA

Masami Kamigaito, Nagoya University, Japan

Justin Kennemur, Florida State University, USA

Christopher Kloxin, University of Delaware, USA

Jacques Lalevée, Institut de Science des Matériaux de Mulhouse, France

Sébastien Lecommandoux, ENSCPB, University of Bordeaux, France

Muriel Lansalot, Université Lyon, France

Sébastien Lecommandoux, ENSCPB, University of Bordeaux, France

Rachel Letteri, University of Virginia, USA

Guey-Sheng Liou, National Taiwan University, Taiwan

Guoliang Liu, Virginia Tech, USA

Shiyong Liu, University of Science & Technology, China

Timothy Long, Arizona State University, USA

Ian Manners, University of Victoria, Canada

John Matson, Virginia Tech, USA

Markus Muellner, University of Sydney, Australia

Ravin Narain, University of Alberta, Canada

Julien Nicolas, University Paris-Sud, France

Kyoko Nozaki, University of Tokyo, Japan

Rachel O'Reilly, University of Warwick, UK

Makoto Ouchi, Kyoto University, Japan

Derek Patton, University of Southern Mississippi, USA

Theresa Reineke, University of Minnesota, USA

Megan Robertson, University of Houston, USA

Amitav Sanyal, Bogazici University, Turkey

Felix Schacher, Friedrich-Schiller-University Jena, Germany

Helmut Schlaad, University of Potsdam, Germany

Ellen Sletten, University of California, Los Angeles, USA

Martina Stenzel, University of New South Wales, Australia

Molly Stevens, Imperial College London, UK

Natalie Stingelin, Georgia Institute of Technology, USA

Ben Zhong Tang, HKUST, Hong Kong, China

Lei Tao, Tsinghua University, China

Patrick Theato, KIT, Germany

Maria Vamvakaki, FORTH-IESL, Greece

Jan van Hest, Eindhoven University of Technology, The Netherlands

Kelly Velonia, University of Crete, Greece

Maria J. Vicent, CIPF, Spain

Brigitte Voit, Leibniz Institute of Polymer Design, Germany

Marcus Weck, NYU, USA

Charlotte Williams, University of Oxford, UK

Frederik Wurm, Max-Planck-Institut für Polymerforschung, Germany

Yusuf Yagci, Istanbul Technical University, Turkey

Naoko Yoshie, University of Tokyo, Japan

Wei You, University of North Carolina at Chapel Hill, USA

Xi Zhang, Tsinghua University, China

Information for Authors

Full details on how to submit material for publication in Polymer Chemistry are given in the Instructions for Authors (available from <http://www.rsc.org/authors>). Submissions should be made via the journal's homepage: rsc.li/polymers Submissions: The journal welcomes submissions of manuscripts for publication as Full Papers, Communications, Perspectives and Reviews. Full Papers and Communications should describe original work of high quality and impact.

Colour figures are reproduced free of charge.

Additional details are available from the Editorial Office or

<http://www.rsc.org/authors>

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

Registered charity number: 207890

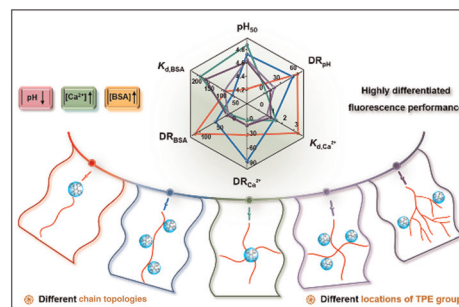


PAPERS

5178

Highly differentiated multi-stimuli-responsive fluorescence performance of tetraphenylethylene-containing styrene–maleic acid copolymers induced by macromolecular architecture control

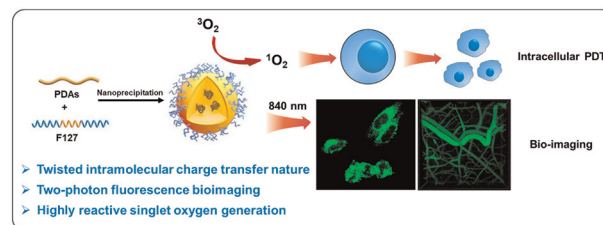
Ranran Gao, Xiaoning Guo, Li Wang* and Wantai Yang*



5191

Achieving two-photon fluorescence bioimaging and photodynamic therapy for D–A conjugated polymers through manipulating twisted intramolecular charge transfer

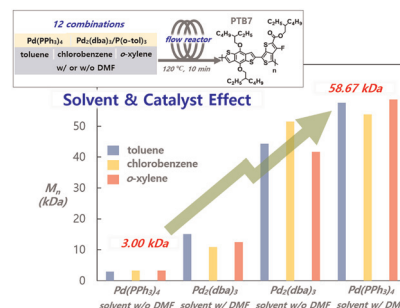
Liwen Hu, Shengzu Liao, Tianze Hu, Peiling Chen, Chunxiao Wang, Ting Guo,* Renqiang Yang and Lei Ying*



5200

Flow synthesis of conjugated polymers: exploring the effects of solvent and catalyst on molecular weight

Jin Woo Jeon and Ye-Jin Hwang*



5208

Anti-inflammatory unimolecular micelles of redox-responsive hyperbranched polycurcumin amphiphiles with enhanced anti-inflammatory efficacy *in vitro* and *in vivo*

Da Huang,* Qiang Tang, Minglang Zou, Yongming Wang, Fang Luo, Jinyi Mu, Yuanzi Wu, Zuquan Weng* and Zhenyu Lin

